

Table 1
Competitive Access Providers:
Summary by State and City as of May 1994

STATE	EXISTING CITY/AREA	CAP	PLANNED CITY/AREA	CAP
NEW YORK	Albany Buffalo Long Island Mamaroneck New York (Metro) Rochester Syracuse Westchester White Plains Yonkers	MFS, Hyperion MFS, Hyperion, Locate TCG, Cablevision, Locate, MFS TCG MFS, TCG, Locate, Cablevision ACC Corp. Hyperion TCG MFS, TCG, NNI MFS	New York (Metro)	MCI/Metro
NORTH CAROLINA	Cary Charlotte Durham Raleigh	FiberSouth IOG-Access Svcs., Locate, Charlotte, AXS FiberNet FiberSouth	Asheville Charlotte Currituck County Durham Greensboro Raleigh Research Tri. Park State of N.C. Winston-Salem	American Comm. Svcs. (ACSI) ACSI, Time-Warner Cox FiberNet FiberNet, Am. Lightwave, FiberSouth, Time-Warner American Comm. Svcs. (ACSI), ICC Time-Warner, FiberNet FiberNet, Am. Lightwave, FiberSouth Jones Lightwave American Comm. Svcs. (ACSI)
NORTH DAKOTA				
OHIO	Cincinnati Cleveland Columbus Dayton Lima Mansfield Marysville Mason/Lebanon Warren	FiberNet, IntelCom, City Signal, Time-Warner, WU-ATS, Ohio Links Intelcom Group City Signal, Time Warner Intelcom Group Time-Warner Adelphia Time-Warner Coaxial Cable TCI	Akron Butler Clark Cleveland Cleveland-Cuyahoga Cincinnati Columbus-Franklin Crawford Delaware Erie Geauga Greene Hamilton	IntelCom IntelCom IntelCom TCG MFS, City Signal, IntelCom, Time-Warner, TCG IntelCom, Ohio Links, City Signal, Time-Warner, WU-ATS MFS, City Signal, Fibertel, Time-Warner, W.U. Cablevision Fibertel, Time-Warner Cablevision Cablevision City Signal City Signal, FiberNet, IntelCom, Western Union

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			Huron	Cablevision
			Lake	Cablevision
			Lorain	Cablevision
			Lucas	City Signal, IntelCom
			Mahoning	City Signal, IntelCom
			Medina	Cablevision, IntelCom
			Montgomery	City Signal, IntelCom
			Montrose	IntelCom
			Morrow	Cablevision
			Oxford	Locate
			Portage	IntelCom, Cablevision
			Richland	Cablevision
			Summit	IntelCom, Time-Warner, Cablevision
			Tipp City	Time-Warner, IntelCom
			Toledo	IntelCom
			Troy	Time-Warner, IntelCom
			Trumbull	City Signal, IntelCom
			Union	Fibertel
			Wayne	Cablevision
			Wood	City Signal, IntelCom
OKLAHOMA	Broken Arrow Oklahoma City Tulsa	PSO Metrolink Cox Cable, Dobson Fiber PSO Metrolink		
OREGON	Beaverton Portland	Electric Lightwave, PacNet, FiberNet Electric Lightwave, PacNet	Beaverton	MFS
PENNSYLVANIA	Allegheny County Beaver County Carlisle Chambersburg Pittsburgh Philadelphia	TCC, MFS, Penn Access TCC Valletnet Valletnet MFS, TCI/Penn Access, Locate MFS, Eastern TeleLogic, Locate	Erie	Penn Access

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RHODE ISLAND	State of R. I.	Locate	Providence	MFS, TCG, Jones, Brooks
SOUTH CAROLINA	Cayce	MPX	Charleston	American Comm. Svcs. (ACSI), ICG
	Charleston	PalmettoNet	Columbia	American Comm. Svcs. (ACSI), ICG
	Columbia	MPX, PalmettoNet	Greenville	American Comm. Svcs. (ACSI), ICG
	Florence	PalmettoNet	Spartanburg	ICG
	Myrtle Beach	PalmettoNet		
	St. George	PalmettoNet		
	Sumter	PalmettoNet		
	Waterboro	PalmettoNet		
	Yemassee	PalmettoNet		
SOUTH DAKOTA				
TENNESSEE	Memphis	City Signal	Chattanooga	American Comm. Svcs. (ACSI)
	Nashville	City Signal, IOG-Access Svcs.	Knoxville	American Comm. Svcs. (ACSI)
			Memphis	Time-Warner, Access Transmission Svcs.
			Nashville	Hyperion, ACSI, Access Transmission Svcs.
TEXAS	Addison	MFS	Denton	MFS, TCG
	Austin	Time-Warner	Houston	Time-Warner
	Carrollton	MFS, TCG	Louisville	MFS
	Dallas	MFS, TCG, MCI Metro, FiberSouth, Phonoscope Com.		
	Farmers Branch	MFS		
	Houston	MFS, Phonoscope, TCG, MCI Metro, FiberSouth		
	Irving	TCG, MFS		
	Plano	MFS, TCG		
	Richardson	MFS		
	San Antonio	FiberSouth		
UTAH	Salt Lake City	Questar Telecom, IntelCom	Salt Lake City	Electric Lightwave
VERMONT			State of Vt.	Hyperion

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	Bluefield	ValleyNet		
	Charlottesville	ValleyNet		
	Covington	ValleyNet		
	Edinburg	ValleyNet		
	Harrisonburg	ValleyNet		
	Lexington	ValleyNet		
	Norfolk	Cox FiberNet		
	Radford	ValleyNet		
	Richmond	AlterNet of Virginia, Hyperion, Virginia Metrotel		
	Roanoke	ValleyNet		
	Staunton	ValleyNet		
	Stephens City	ValleyNet		
	Troutville	ValleyNet		
	Virginia Beach	Cox FiberNet		
	Waynesboro	ValleyNet		
	Wytheville	ValleyNet		
WASHINGTON	Issaquah	TCG	Everett Kirkland	TCG TCG
	Kennewick	Northwest Microwave		
	Seattle	FiberNet, Electric Lightwave, TCG, Digital Direct		
		Northwest Microwave, PacNet, MFS		
	Spokane	Electric Lightwave		
	Wenatchee	Northwest Microwave		
WEST VIRGINIA	Martinsburg	ValleyNet		
WISCONSIN	Milwaukee	TCG		
WYOMING				

Source: Bellcore, 1994

Figure 1-a
Distribution of Access Revenues
Baltimore

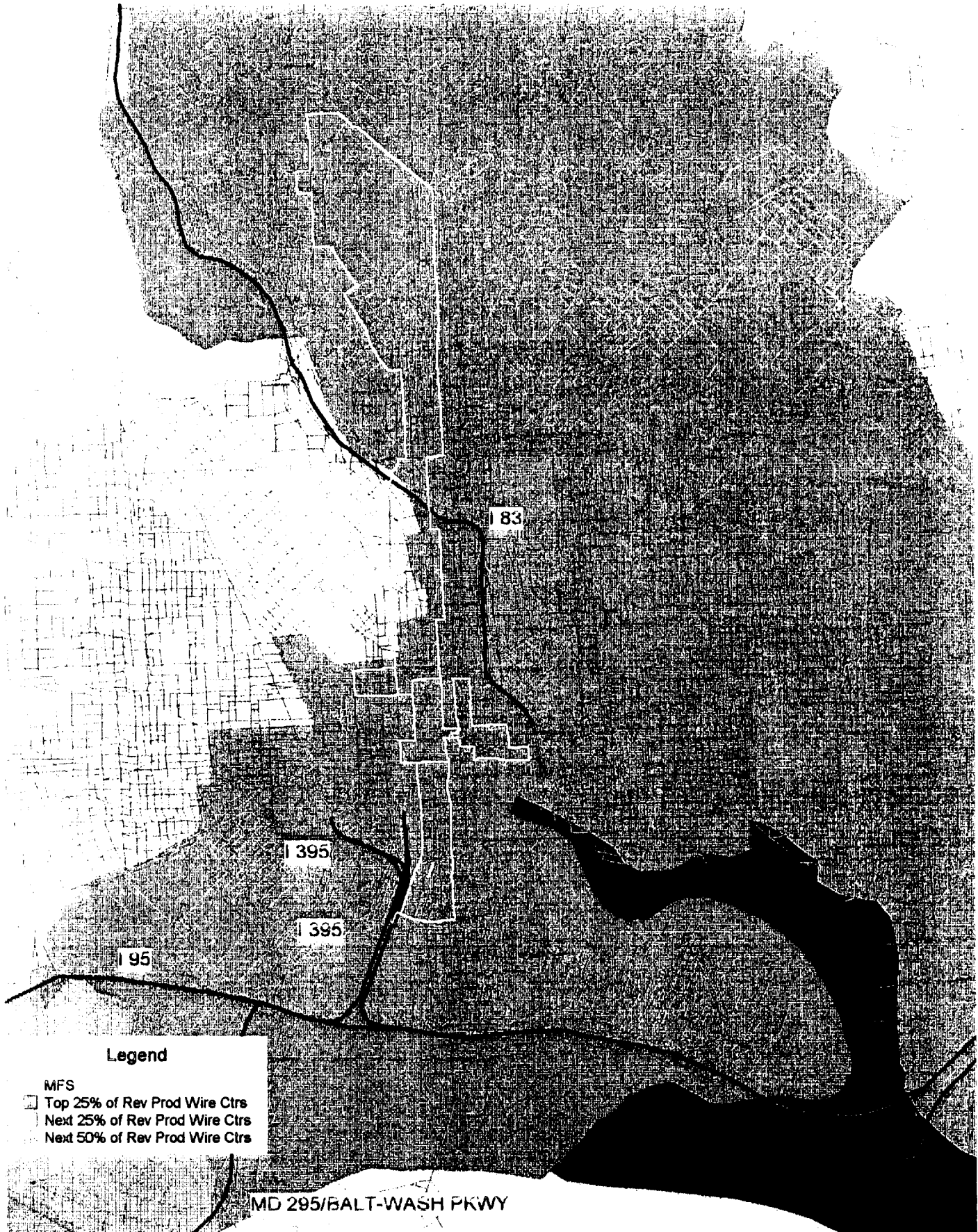


Figure 1-b

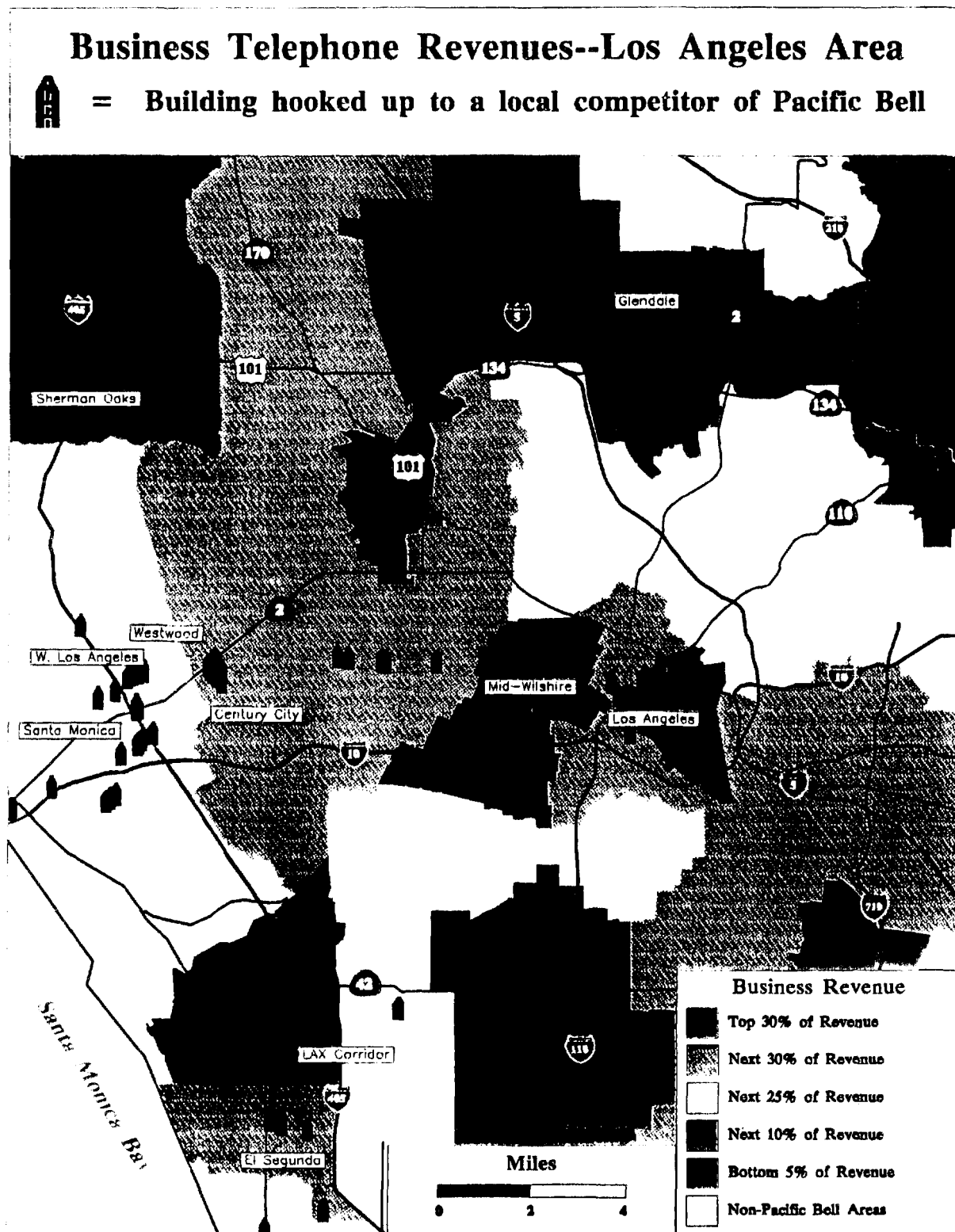
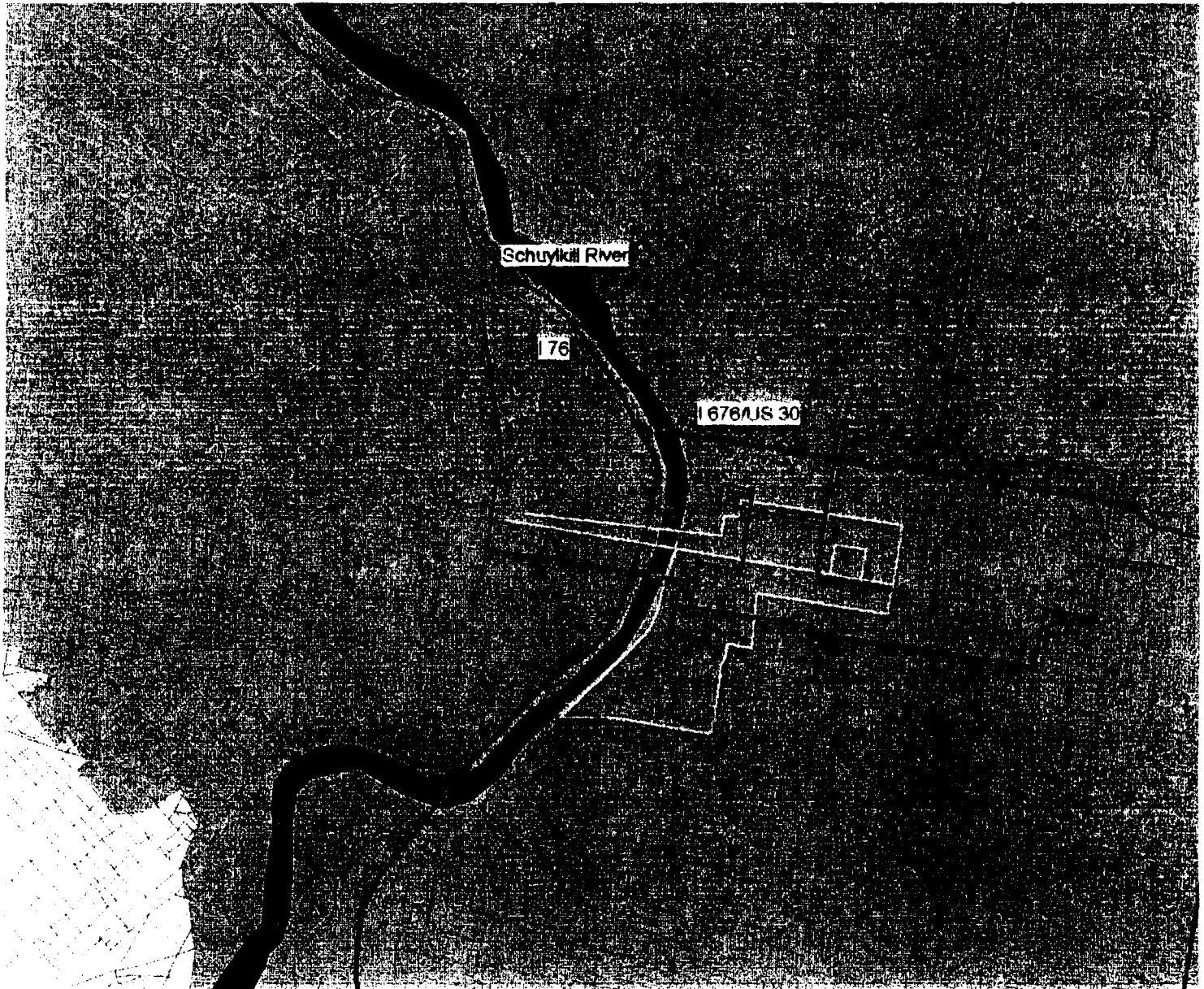


Figure 1-c

Distribution of Access Revenues
Philadelphia, Pennsylvania



Legend

- EASTERN TELELOGIC
MFS Network
- Top 25% of Wire Centers
- Next 25% of Wire Centers
- Next 50% of Wire Centers

Figure 1-d
Distribution of Access Revenues
Pittsburgh

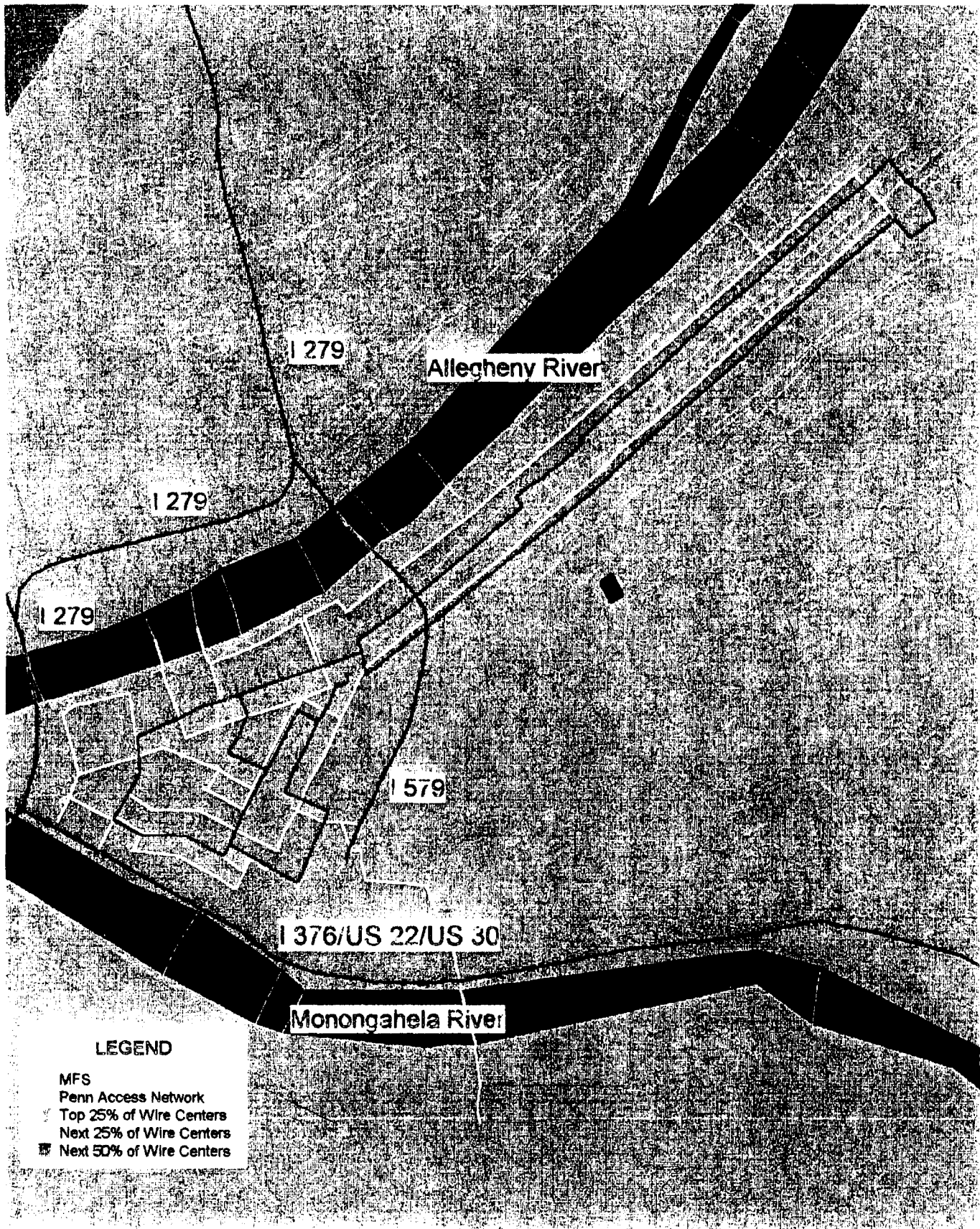


Figure 1-e

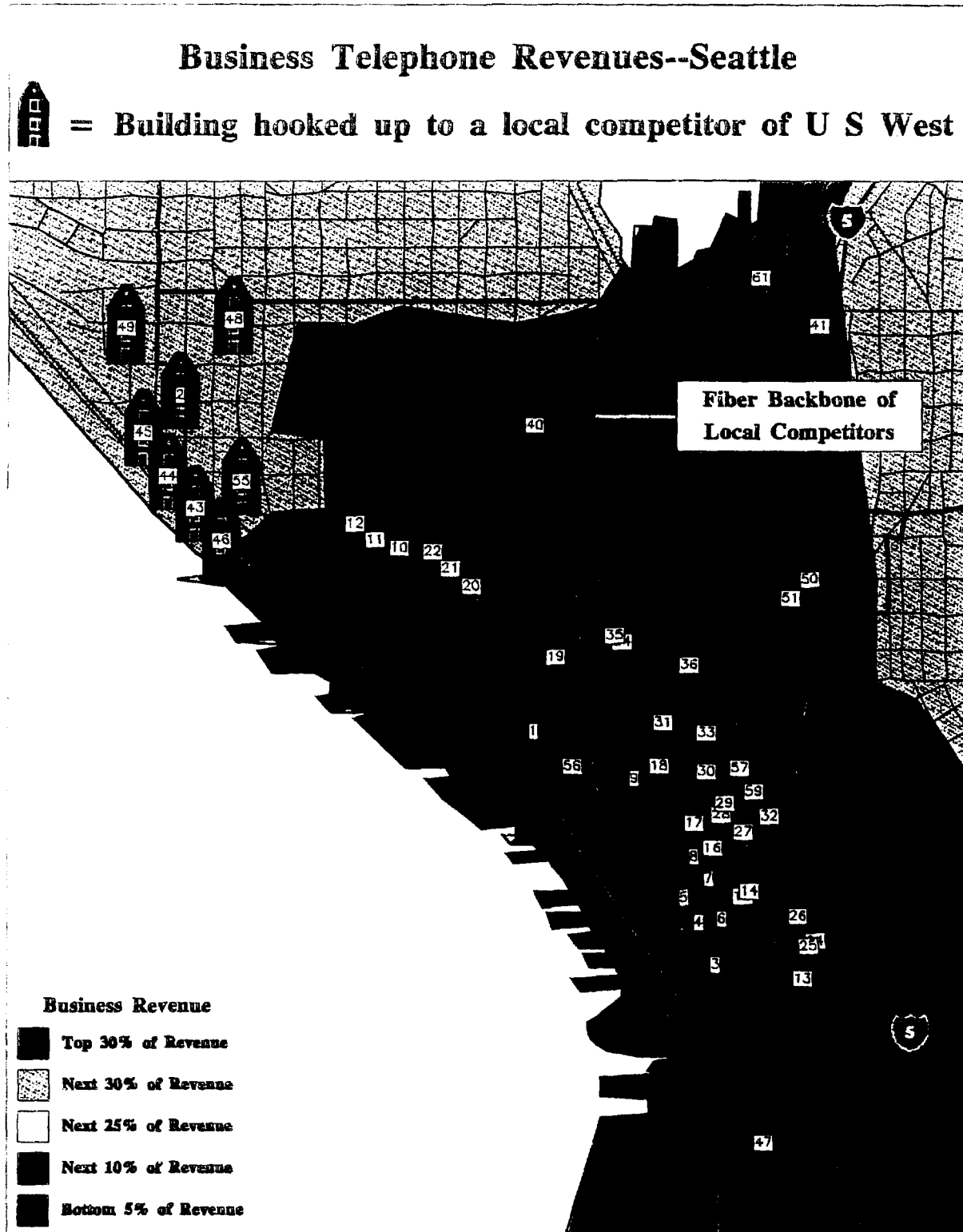








Figure 1-f

Where the Competition is in New York City

 = Building hooked up to a local competitor of New York Telephone

Business Revenue Concentrations

-  Top 30% of Revenue
-  Next 30% of Revenue
-  Next 25% of Revenue
-  Next 10% of Revenue
-  Bottom 5% of Revenue

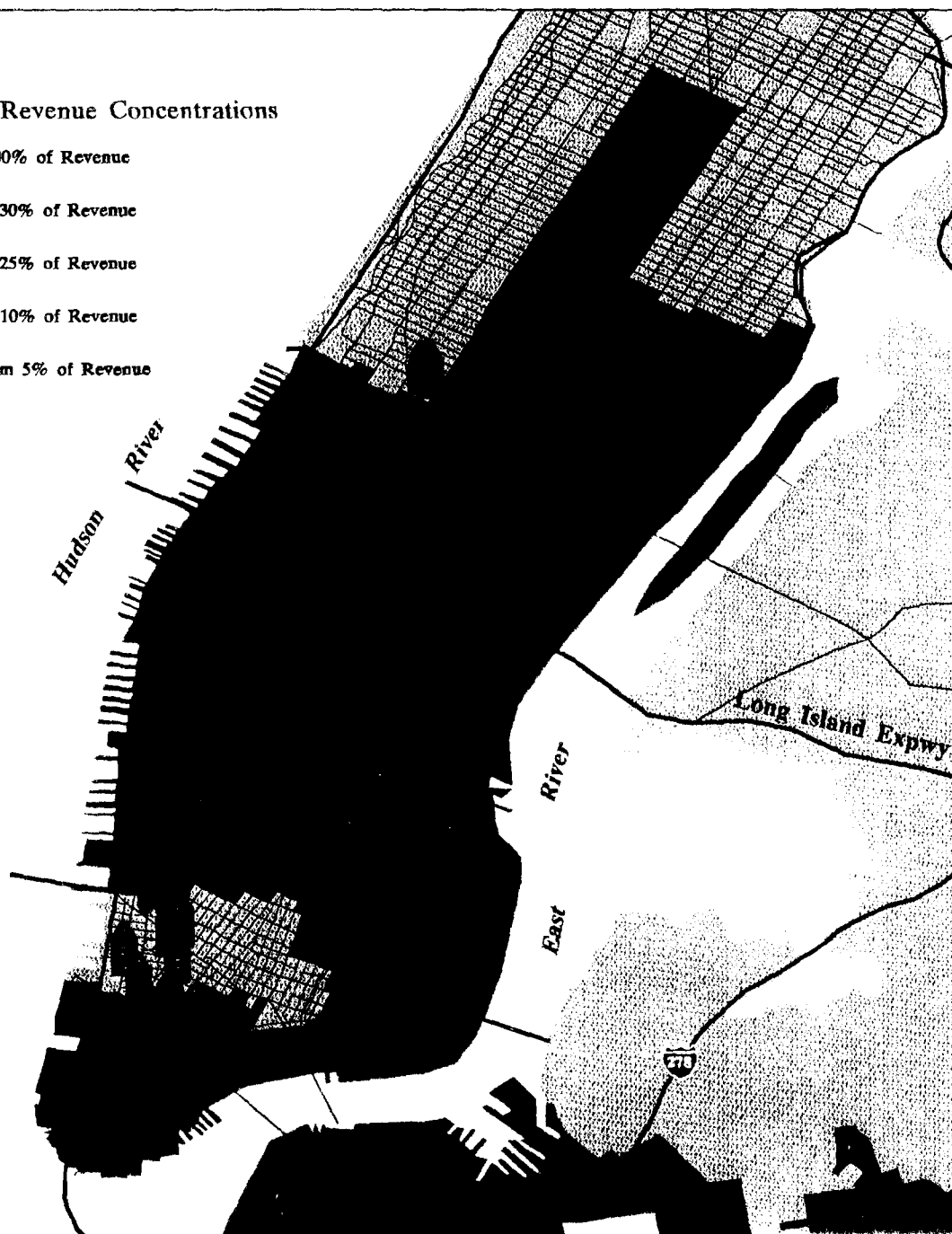
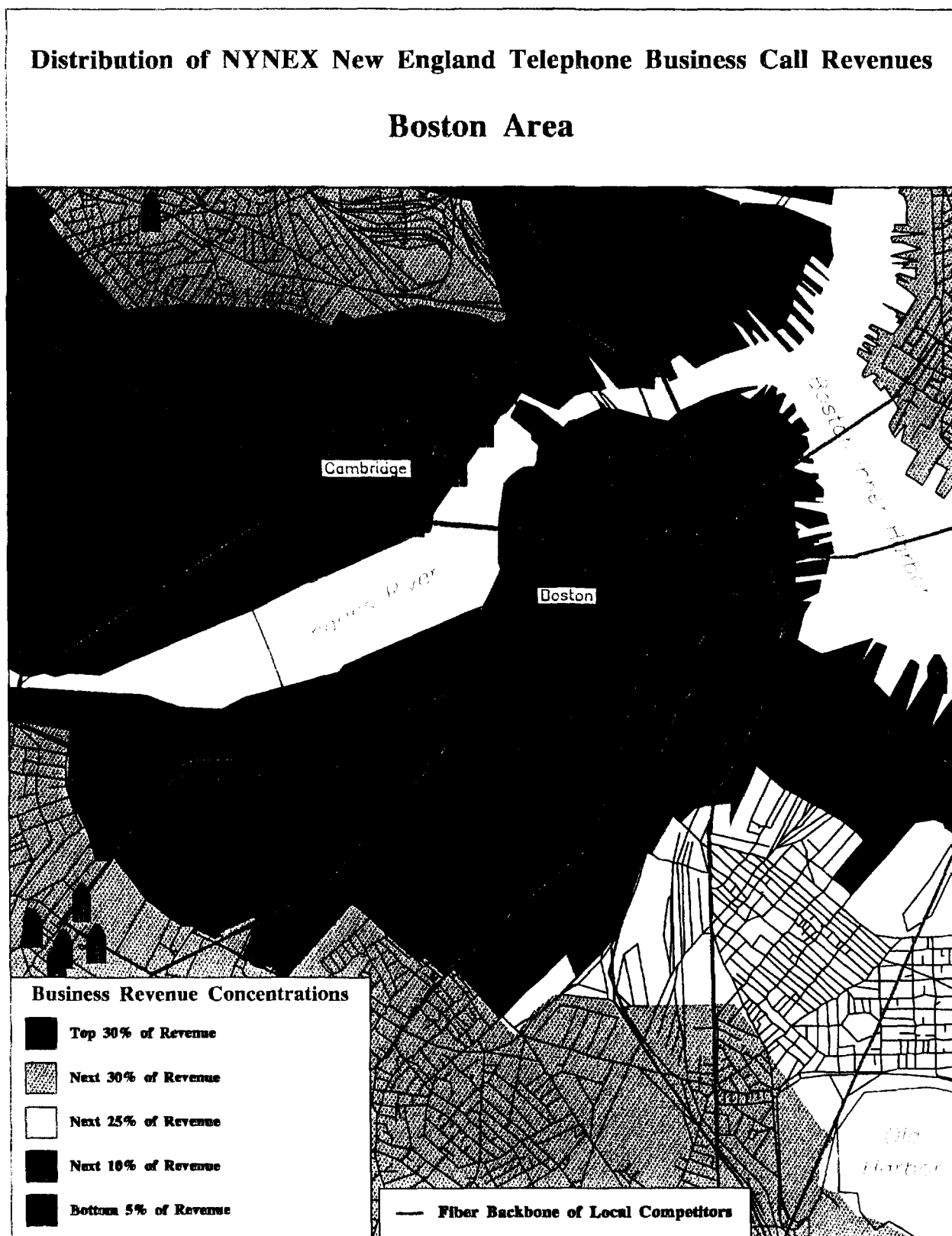


Figure 1-g



ATTACHMENT 2

Report of Dr. Randall S. Billingsley

by

Dr. Randall S. Billingsley

Report of Dr. Randall S. Billingsley
On Behalf of the United States Telephone Association
CC: Docket No. 94-1
Price Cap Performance Review for Local Exchange Carriers

I. INTRODUCTION

My name is Randall S. Billingsley. I hold the position of Associate Professor of Finance at Virginia Polytechnic Institute and State University. I also act as a financial consultant in the areas of cost of capital analysis, financial security analysis and valuation, and investment analysis. My business address is: Department of Finance, The R. B. Pamplin College of Business, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061-0221. A more detailed description of my qualifications is contained in Exhibit No. RSB-7.

The purpose of this proceeding is to facilitate the Federal Communications Commission's (FCC's) review of price cap incentive regulation for the local exchange carriers (LECs). This review is designed to evaluate the success of and improve upon the incentive regulatory mechanism, which the FCC found superior to "traditional" cost-based rate of return/rate base regulation when it adopted incentive regulation for the LECs in 1990.

Traditional cost-based rate of return/rate base regulation is inconsistent with and contrary to the principles of incentive regulation. The application of rate of return based measurements and mechanisms, including the FCC's current sharing mechanism, to the price cap LECs undermines and may even eliminate incentives. This proceeding is not intended to reverse the FCC's regulatory reform efforts. Further, this proceeding has not been constructed to create the voluminous and complex record needed to facilitate a rate of return represcription.

AT&T and MCI Communications' Communications (MCI) are using this incentive regulation review as an excuse to question incentive regulation in favor of a regression to ratebase/rate of return regulation. They provide flawed studies grounded in traditional rate of return rate making terms to calculate findings that are, by definition, incompatible with incentive regulation. While recognizing the incompatibility of "traditional" rate of return theory with incentive regulation, I am responding in a manner consistent with the perspective reflected in comments filed by other parties to this proceeding, specifically AT&T and MCI.

This response demonstrates that AT&T's and MCI's submissions are irrelevant to this proceeding and that their conclusions regarding the cost of capital are incorrect. First, I rebut Mr. Matthew I. Kahal's statement on behalf of MCI wherein he erroneously estimates the overall cost of capital for the LECs

to be 9.54%. I also rebut AT&T's incorrect observations that the LECs' 1993 overall cost of capital was only 9.33% and its average cost of capital was 9.93% for the period from 1991 through 1993. Finally, even though rate of return regulatory parameters are not appropriate for price cap regulation, I estimate of the LECs' cost of equity, cost of debt, and overall cost of capital to provide an objective measure against which to assess MCI and AT&T's biased calculations.

Despite some reduction in the level of interest rates since 1990 (rates actually have risen since late 1993 to the present), the FCC's reference point return of 11.25% underestimates the LECs' overall cost of capital of the LECs as it would be used in a traditional rate of return proceeding. This is due, in part, to the offsetting effect of a significant increase in the business risk of the industry perceived by the investment community.

II. INAPPROPRIATENESS OF RATE OF RETURN AND SHARING PARAMETERS FOR PRICE CAP LECS

The FCC should sever any link to cost-based regulation by eliminating the sharing parameters and the lower-end formula adjustment mark. Price cap regulation regulates prices, not earnings, to provide proper efficiency and investment incentives for price cap LECs and their investors. The elimination of incompatible rate of return constraints will allow LECs to meet

the FCC's objectives for the LECs. These objectives include the substantial infrastructure development, economic growth stimulation, enhanced productivity, new service introduction, and technology deployment, objectives that are discussed in the FCC's Notice of Proposed Rulemaking in this proceeding.

AT&T and MCI recommend not only retaining this sharing mechanism, but they also recommend lowering the sharing parameters and making a one-time downward adjustment to the price indices based on an alleged lower cost of capital for LECs. I demonstrate that these assertions concerning the cost of capital for the LECs are incorrect. Thus, the FCC should neither lower the sharing parameters nor make a one-time adjustment to the price indices.

III. INVESTORS' PERCEPTION OF INCREASED BUSINESS RISK IN THE TELECOMMUNICATIONS INDUSTRY

Recent investment reports and industry analyses reveal that investors perceive that the business risk faced by the LECs has increased in recent years and will continue to increase in the future. A representative summary of the dominant view of the investment community is presented in the telecommunications section of Standard & Poor's Industry Surveys (April 1, 1993, Page T-19):

Competition has been the driving force in the
[telecommunications] industry in the recent past.

Competition, competition and more competition will be the driving force in the future. Technology and regulatory initiatives have been chipping at old structural barriers, building on earlier moves to create a truly competitive marketplace.

The competitive relationship between cable and telecommunications (telcos) firms such as the LECs is of concern to the investment community. In its recent report on Telecom Services (March 4, 1994, page 1), **Merrill Lynch** agrees with TCI Chairman John Malone's views of this relationship and makes the following five observations on the state of competition between telcos and cable companies:

- 1) RBOCs are extremely vulnerable, especially in their access revenues;
- 2) Cable can get into telco before telco can get into cable;
- 3) Telcos have far more to lose than cable;
- 4) The coming of competition to the local phone business will accelerate, not decelerate, as a result of the breakup of the Bell Atlantic/TCI merger;
- 5) The cable industry still needs a strong telco partner, but not an RBOC.

The effect of competition on the LECs' profitability and the deployment of technology is discussed in a report by **Morgan Stanley** entitled, "Bell Companies: Managing Through a Difficult Environment" (July 16, 1993, page 1):

Increased competition is likely to hurt profitability. Interconnect/access rates should

continue to decline, putting pressure on RHC margins and revenues. Bell RHCs are facing increased pressure to accelerate capital expenditure plans and fiber buildouts ... A few other big risks exist, in our view. Competition is increasing on all fronts for the local, toll and access portions of the Bell Companies' revenues.

The emergence of new entrants into the telecommunications marketplace is expected to adversely affect the LECs. As noted by Jack Grubman in a **Paine Webber** report entitled, "Regional Bell Operating Companies - Lots of Dangerous Turns Likely on the Electronic Highway" (Paine Webber, February 23, 1994, page 2):

...the RBOCs, like AT&T a decade ago, will have to deal with regulatory rules in their core business tilted in favor of new entrants while the RBOCs themselves have to figure ways of making up for lost revenues and profits by venturing into uncharted waters of video and broadband services.

Customers have a significant incentive to bypass LECs' networks. The LECs have historically had the responsibility to provide affordable, universal telephone service. This responsibility created a social pricing scheme that left business and long distance services priced uneconomically. While the AT&T divestiture in 1984 addressed some of these pricing issues, the fact that the LECs are required under their regulatory contract to foster the achievement of universal telephone service leaves them vulnerable to being underpriced by unregulated (or less regulated) competitors that selectively provide access services. CAPs have grown because they can price their services more aggressively than the LECs since they do not have the universal service responsibility shouldered by the LECs.

Evidence of the financial markets' expectations for the growth in competitive access providers' (CAPs') revenues is provided by Dr. Robert Harris in his report (filed on behalf of USTA on May 9, 1994 in this proceeding) entitled, "Economic Benefits of LEC Price CAP Reforms" (page B-15):

Substantial evidence exists that CAPs are poised for a significant expansion of their services. For example, MFS [Metropolitan Fiber Systems], with 1993 operating revenues of \$135 million, is a publicly-traded company with a market value of nearly \$2 billion. This indicates that the current revenues and profits of MFS are much lower than the market's expectation of MFS's future revenues and profits.

Thus, it is clear that the investment community perceives the

business risk of the LECs to be increasing due to the radical shift in the competitiveness of the telecommunications marketplace, rapidly increasing technological change, and the diversification of user needs. These greater risks significantly increase the cost of capital for the LECs.

IV. REBUTTAL OF MCI AND AT&T'S COST OF CAPITAL ESTIMATES FOR THE LECs

A. Rebuttal of MCI

Mr. Kahal's stated purpose is to "document the change in market capital costs since 1990 and to perform an update of this Commission's 1990 cost of capital determination using the most recently available market data" (page 5, lines 4-6). In fact, Mr. Kahal's incorrect analysis indicates that there has been no change in the cost of equity since he estimated the cost of equity capital to be between 11% to 12% both in 1990 and presently. Despite Mr. Kahal's prior estimates of 11% to 12%, the FCC adopted a cost of equity of 12.5% to 13.5% in 1990, which is well above the range of Mr. Kahal's estimates. Thus, Mr. Kahal's estimates are as incorrect today as they were in 1990.

Mr. Kahal recommends an unrealistically low overall cost of capital for the LECs of 9.54%. This is based on his erroneous estimate of the cost of equity for the LECs of 11.00% and an estimated cost of debt of 8.01%. Mr. Kahal also estimates a cost of equity of 12.0% by adjusting his 11.0% estimate in an attempt

to replicate the FCC's previous approach, as indicated in its 1990 order.

Mr. Kahal's specific errors in estimating the cost of capital include: 1) a misunderstanding of the nature and capital market effects of the increase in the competition for local exchange services since 1990; 2) improper reliance on the RBHCs as comparable in risk to the LECs and an associated incorrect application of the constant growth Discounted Cash Flow (DCF) model to estimate the cost of equity; 3) incorrect capital structure analysis; 4) use of an incorrect annual form of the DCF model in the presence of quarterly dividend payments, and 5) no allowance for equity flotation costs. I will discuss each of these errors in turn below.

First, Mr. Kahal's position on the trend toward increased competition in the local exchange telephone business demonstrates his misunderstanding of that trend. While Mr. Kahal correctly observes that "the scope of competition for local exchange service has increased since 1990," he misleadingly concludes that "this would imply an increase in the cost of equity (or in this case, a risk increase offset to general market declines in the cost of capital) if this trend was unexpected" (page 19, lines 6-8). He incorrectly observes that because the increases in competition were supposedly predicted and "widely discussed in the trade press" that the trend was expected and thus could not have influenced the LECs' cost of equity capital and, by implication,

their overall cost of capital.

Mr. Kahal's argument would be correct only if an investor forming an expectation of future competition for LEC services today would make exactly the same estimate that the same investor would have made in 1990. This is clearly not a reasonable assumption. Today's investor will incorporate information generated by the events of the last four years -- a period which has seen dramatic changes in local exchange markets. Mr. Kahal presents no evidence that the investment community has been able (now or ever) to fully anticipate the specific nature and implications of increasing competition in the local exchange business since 1990.

While Mr. Kahal's premise that competition has increased is accurate, his conclusion that the LECs' cost of equity and overall cost of capital could not have increased since 1990 is false. He has misapplied a stringent theoretical concept of market efficiency, which assumes that investors have complete and perfect information, without considering the practical realities faced by investors. Moreover, Mr. Kahal ignores the fact that today's stock price does not only reflect today's level of competition, but rather today's outlook for future competition. Mr. Kahal would have the Commission believe that the profound events of the past four years were predictable in 1990 and were in fact fully and accurately anticipated by investors. This view is not true.

Second, Mr. Kahal improperly relies on the RBHCs as an appropriate

group of firms comparable in risk to the LECs. The RBHCs are not, as a group or individually, comparable in risk to the LECs as the BOCs. The RBHCs possess characteristics that are inconsistent with the assumptions underlying the version of the DCF model used in my analysis as well as the versions used by AT&T and MCI. These assumptions are simply that the long-run constant growth in earnings and dividends are constant over an indefinite (or infinite) time horizon and are fully reflected in the current stock price. However, the RBHCs' share price reflect the expected favorable current and future values of investments in unregulated operations which is quite different from the access services produced by the LECs regulated. Therefore, the RBHCs are not good proxies of risk for the BOCs and thus for the LECs, and their use as proxies violate the assumptions underlying the constant growth DCF model used by both AT&T and MCI.

If one were to apply the constant growth DCF model to the RBHCs, the resulting DCF estimates would not be reliable. The growth rate does not fully express the expected value of investments in some unregulated lines of business. Financial analysts' estimates of growth rates only cover the next five years. Yet the profits on some unregulated line of business are not expected within the next five years. The RBHCs' expected growth rate is a composite of all of its subsidiaries' expected growth rates. The growth rate expectations for many of the RBHCs' unregulated subsidiaries are expected to increase significantly beyond the next five years. Thus, Mr. Kahal's application of the constant growth version of

the DCF model to the RBHCs using five year analysts' growth estimates produces a cost of equity estimate for the LECs that is biased downwards.

In summary, the RBHCs should not be used as risk proxies for the LECs in a cost of equity analysis because the RBHCs do not constitute a comparable risk benchmark. The use of the RBHCs as such a benchmark holds the LECs to a standard that underestimates their cost of equity capital.

Third, Mr. Kahal attempts to justify his incorrect use of the RBHCs' capital structure instead of the correct BOCs' capital structure. Mr. Kahal merely observes, without offering any supporting theory or empirical evidence, that a BOC "has the ability to move debt leverage from the balance sheet of an operating company to that of the holding company or to that of its nonregulated subsidiaries" and that "such a practice would thicken the telephone company's equity ratio, and since equity is more expensive than debt, increase the allowed overall rate of return" (page 20, lines 6-10). Financial marketplace oversight effectively eliminates the RBHCs' "ability to manipulate" their capital structures. This oversight is carried out by groups such as bond rating agencies, state public utility commissions and the investment community, which constantly engage in the financial analysis and monitoring of the RBHCs and the BOCs. Additionally, no evidence has been provided that manipulation has ever actually occurred.

Mr. Kahal's capital structure ratios, cost of debt, and overall cost of capital estimates are fraught with internal logical inconsistencies. First, Mr. Kahal shows an average RBHC equity ratio of 56.9% in his Table 5 even though he uses an equity ratio of 51.30% to develop his overall cost of capital. Second, Mr. Kahal's 8.01% cost of debt is based on average BOC rather than RBHC capital structure and interest cost data. Thus, Mr. Kahal mismatches the BOCs' cost of debt and the RBHCs' capital structure ratios. Finally, Mr. Kahal incorrectly uses a RBHC capital structure of 51.30% equity and 48.70% debt rather than the appropriate current average BOC capital structure of 59.03% equity and 40.97% debt.

Fourth, turning to Mr. Kahal's flawed DCF approach, he uses an incorrect form of the annual DCF model that ignores the presence of quarterly dividend payments. Mr. Kahal's DCF model would be appropriate only if firms paid dividends annually, which they generally do not. Mr. Kahal's approach systematically underestimates the resulting cost of equity capital.

The annual form of the DCF model assumes that investors receive dividends only once a year and that they have the opportunity to reinvest those cash flows in alternative investments of the same risk. The required rate of return implied by the annual form of the DCF model will be biased downward because investors usually receive their dividend payments in quarterly rather than in annual